

Claims

1. A method of improving the properties of urea granulates, more especially the caking tendency, the dust formation and the foaming tendency in aqueous media, by the addition of an additive to the urea, characterized in that the additive comprises a carboxylic acid compound with the general formula XY-(Z)-COOH, in which Z is a saturated or unsaturated hydrocarbon with 1-25 carbon atoms and X and Y are selected from the group consisting of a hydrogen atom or a polar organic functional group, and in that the additive is added as a solution in a polar solvent to the urea granulates, which are subsequently dried.
2. A method according to claim 1 characterized in that the polar solvent is water.
3. A method according to claim 1 or 2 characterized in that Z has 2-5 carbon atoms.
4. A method according to claim 1-3, characterized in that the polar organic functional group is selected from a group consisting of a carboxylic acid group, a hydroxyl group, an amine group or an acetal group.
5. A method according to anyone of the claims 1-4, characterized in that X is a hydrogen atom or a hydroxyl group and Y is a carboxylic acid group.
6. A method according to any of the claims 1-5, characterized in that the aqueous solution has a concentration of 0.5-60 wt % of the carboxylic acid compound.
7. A method according to claim 6, characterized in that the concentration is 5-30 wt %.
8. A method according to anyone of the preceding claims, characterized in that based upon the weight of urea, the concentration of the carboxylic acid compound is 100-10.000 ppm, preferably 500-3000 ppm.

9. A method according to anyone of the preceding claims, characterized in that during the addition of the aqueous solution the temperature of the urea is 30-90°C, preferably 40-70° C.
10. Carboxylic acid compound to be used in the method according to anyone of the preceding claims, characterized in that the compound has the general formula XY-Z-COOH in which Z is a saturated or unsaturated hydrocarbon with 1-25 C-atoms, and X and Y are selected from the group consisting of a hydrogen atom or a polar organic functional group.
11. Compound according to claim 10, characterized in that Z has 2-5 carbon atoms.
12. Compound according to claim 10 or 11, characterized in that the polar organic functional group is selected from a group consisting of a carboxylic acid group, a hydroxyl group, an amine group or an acetal group.
13. Compound according to claim 11 or 12, characterized in that X is a hydrogen atom or a hydroxyl group and Y is a carboxylic acid group.
14. Composition to be used in the method according to anyone of the preceding claims as a urea additive.